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**SOCIETY MEETING OF MARCH 28, 1990**  
**EVOLUTION AND HYBRIDIZATION OF ADMIRAL BUTTERFLIES**  
**Dr. Austin P. Platt, Speaker**

Insect taxonomists beware! If all groups are as interesting and complex as the butterfly genus *Limenitis*, most disputes between lumpers and splitters may never be resolved. Only in recent years, more than a century after the principal morphological types were described, has a reasonable understanding of the relationships among admiral butterflies emerged. As Nobelist Arthur Kornberg once said, "I have yet to see a complicated problem which, when looked at in the right way, doesn't become more complicated."

Dr. Austin P. Platt of the University of Maryland, Baltimore County, has studied the genetics and speciation of admiral butterflies for more than two decades. These well known and widely distributed butterflies include the viceroy, *Limenitis archippus*; the banded purple, *L. arthemis arthemis*; the red-spotted purple, *L. a. astyanax*; Weidemeyer's admiral, *L. weidemeyerii*; and Lorquin's admiral, *L. lorquini*. The latter four are really allopatric races of a single "super species" which, except for *artemis* and *styanax*, rarely hybridize in the wild. Subspecies of the viceroy, *L. a. archippus* and *L. a. floridensis*, are mimics respectively of the monarch, *Danaus plexippus*, and the queen, *D. gilippus*. Similarly the red-spotted purple and Lorquin's admiral are thought to be mimics of the pipevine swallowtail, *Battus philenor*, and the California sister, *Adelpha bredowii*. Based on cladistic analyses and considerations of geographical distribution, all mimetic forms of *Limenitis* are probably derived from an ancestral form resembling the northern banded purple.

The banded phenotype is widespread in related genera and is controlled by a single autosomal gene. Genetic analyses of natural and laboratory hybrids between various species and subspecies of *Limenitis* indicate that several genes modify the banding pattern. Dr. Platt offered the intriguing hypothesis that the distinctive nonmimetic transverse black band on the hind wing of the monarch-like viceroy represents the vestige of a dark-margined white band that has collapsed as the result of modifying genes. The plausibility of this hypothesis was strengthened by comparing the wing patterns of hybrids between the viceroy and each of the members of the *L. arthemis* super species group that were displayed by Dr. Platt (See Bull. Ent. Soc. Am. (1983) 29(3): 10 - 20).

In addition to a discussion of the evolutionary relationships within *Limenitis*, Dr. Platt discussed their interesting life cycle. The eggs are commonly laid on willow or aspen leaves. They look like miniature geodesic domes. The larvae that hatch from them establish characteristic feeding stations. In response to photoperiod, halfgrown 3rd instar larvae accumulate glycerol as a natural antifreeze and retreat to hibernacula in which they overwinter. These leaf-enclosed structures are easy to recognize and can be collected for population studies.

Dr. Platt's talk at the University of Delaware was attended by seventeen members and four guests.

- Harold B. White  
Corresponding Secretary